

**Notice of RCRA Class 1 Permit Modification  
in Accordance with 20.4.1.900 NMAC  
(incorporating 40 CFR Part 270)**

**Waste Isolation Pilot Plant  
Carlsbad, New Mexico**

**December 12, 2000**

**Notice of RCRA Class 1 Permit Modification  
in Accordance with 20.4.1.900 NMAC (incorporating 40 CFR Part 270)**

Consistent with requirements of 20.4.1.900 New Mexico Administrative Code (NMAC) (hereafter referred to as Part 270 or Section 270.XX) the U.S. Department of Energy, Carlsbad Area Office is submitting to the New Mexico Environment Department (NMED) a notice of Class 1 modification to the Hazardous Waste Facility Permit (NM4890139088-TSDF) for the Waste Isolation Pilot Plant (WIPP) as specified in Module I.B.1. Specifically, this information is provided to comply with the requirements of Section 270.42(a)(1).

The modification is listed in Table 1. Listed information includes a reference to the applicable section of the permit, a brief description of the item, and the class of the item, as identified in Appendix I to Section 270.42. The relevant permit modification category, as identified in Appendix I, is provided as well. A more complete description of the Class 1 modification is provided in Attachment A.

The identified change clarifies the applicability of the Permit with regards to headspace gas sampling. It does not reduce the capacity of the facility to protect human health or the environment and the modified permit is no less stringent than the current permit.

**Table 1. Class 1 Hazardous Waste Facility Permit Modification**

| <b>N<br/>o<br/>.</b> | <b>Affected Permit<br/>Section</b>   | <b>Item</b>  | <b>Catego<br/>ry</b> | <b>Attachment 1<br/>Page #</b> |
|----------------------|--|--|----------------------|--------------------------------|
| 1                    | a.1 Attach. B1-1a(1)<br>a.2 Attach. B1-1a(2)<br>a.3 Attach. B1-1c(5)<br>b.1 Attach. B6<br>b.2 Attach. B6<br>b.3 Attach. B6 | Add informational changes which<br>indicates that an airtight seal may be used<br>to sample through the existing vent hole | A.1                  | A-5                            |

## **Attachment A**

### **Description of the Hazardous Waste Facility Class 1 Permit Modification**

## Item 1

### Description:

This modification makes an administrative change to the method by which a sample may be collected through the existing filter vent hole

### Basis:

This change clarifies headspace gas sampling through the existing filter vent hole by means of an airtight seal.

### Discussion:

The airtight seal was clarified in the Permit in a modification submitted to NMED on November 30, 2000. This method was an adaptation of methods for sampling headspace gas already in the Permit. In making this modification the Permittees overlooked other areas of the Permit that required clarification. This modification makes those clarifications. No changes to any Permit requirement nor any changes to the administrative record are requested.

### Revised Permit Text:

#### a. 1. Attachment B1-1a(1) Manifold Headspace Gas Sampling

This headspace gas sampling protocol employs a multiport manifold capable of collecting multiple simultaneous headspace samples for analysis and QC purposes. The manifold can be used to collect samples in SUMMA® or equivalent canisters or as part of an on-line integrated sampling/analysis system. The sampling equipment will be leak checked and cleaned prior to first use and as needed thereafter. The manifold and sample canisters will be evacuated to 0.0039 inches (in.) (0.10 millimeters [mm]) mercury (**Hg**) prior to sample collection. Cleaned and evacuated sample canisters will be attached to the evacuated manifold before the manifold inlet valve is opened. The manifold inlet valve will be attached to a changeable filter connected to either a side port needle sampling head (for penetrating a carbon-composite filter), **or a sampling head with an airtight seal for sampling through an existing filter vent hole**, or a drum punch sampling head (capable of punching through the metal lid of a drum).

#### a. 2. Attachment B1-1a(2) Direct Canister Headspace Gas Sampling

This headspace gas sampling protocol employs a canister-sampling system to collect headspace gas samples for analysis and QC purposes without the use of the manifold described above. Rather than attaching sampling heads to a manifold, in this method the sampling heads are attached directly to an evacuated sample canister as shown in Figure B1-3.

Canisters shall be evacuated to 0.0039 in. (0.10 mm) Hg prior to use and attached to a changeable filter connected to the appropriate sampling head. The

sampling head(s) must be capable of punching through the metal lid of the drums, **a sampling head with an airtight seal for sampling through the existing filter vent hole** or penetrating a carbon-composite filter to obtain the drum headspace samples. Field duplicates must be collected at the same time, in the same manner, and using the same type of sampling apparatus as used for headspace-gas sample collection. Field blanks shall be samples of room air collected in the immediate vicinity of the waste-drum sampling area prior to removal of the drum lid. Equipment blanks and field-reference standards must be collected using a purge assembly equivalent to the standard side of the manifold described above. These samples shall be collected from the needle tip through the same components (e.g., needle and filter) that the headspace-gas samples pass through.

The sample canisters, associated sampling heads, and the headspace-sample volume requirements ensure that a representative sample is collected. When an estimate of the available headspace-gas volume of the waste container can be made, less than 10 percent of that volume should be withdrawn. A determination of the sampling head internal volume shall be made and documented. The total volume of headspace gases collected during each headspace gas sampling operation can be determined by adding the volume of the sample canister(s) attached to the sampling head to the internal volume of the sampling head. Every effort shall be made to minimize the internal volume of sampling heads.

Each sample canister used with the direct canister method shall have a pressure/vacuum gauge capable of indicating leaks and sample collection volumes. Canister gauges are intended to be gross leak-detection devices not vacuum-certification devices. If a canister pressure/vacuum gauge indicates an unexpected pressure change, determination of whether the change is a result of ambient temperature and pressure differences or a canister leak shall be made. This gauge shall be helium-leak tested to  $1.5 \times 10^{-7}$  standard cc/s, have all stainless steel construction, and be capable of tolerating temperatures to 125EC.

The SUMMA® or equivalent sample canisters as specified in EPA's Compendium Method TO-14 (EPA 1988) shall be used when sampling each drum. These heads shall form a leak-tight connection with the canister and allow sampling through the drum-lid carbon-composite filter, ~~or~~ through the drum lid itself **(by punching, or using an airtight seal to collect a sample through the existing filter vent hole)**. Figure B1-3 illustrates the direct canister-sampling equipment.

#### a. 3. Attachment B1-1c(5) Sampling Head Cleaning

To prevent cross contamination, the needle **or airtight seal**, adapters, and filter of the sampling heads shall be cleaned in accordance with the cleaning procedures described in EPA's Compendium Method TO-14 (EPA 1988). After sample collection, a sampling head shall be disposed of or cleaned in accordance with EPA's Compendium Method TO-14 (EPA 1988), prior to reuse. As a further QC measure, the needle **or airtight seal**, and filter, after cleaning, should be purged with zero air, nitrogen, or helium and capped for storage to prevent sample contamination by VOCs potentially present in ambient air.

b. 1. Attachment B6 – Table B6-5

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| 32 | <p>Are procedures, processes, and equipment in place to ensure that the following manifold sampling procedures are implemented:</p> <ul style="list-style-type: none"> <li>A. The sampling equipment is leak checked and cleaned upon first use and as needed</li> <li>B. The manifold and sample canisters are evacuated to 0.1 mm Hg prior to sample collection</li> <li>C. Cleaned and evacuated sample canisters are attached to the evacuated manifold before the manifold inlet valve is opened</li> <li>D. The manifold inlet valve is attached to a changeable filter connected to different sampling heads that are capable of punching through the metal lid of the drum, <span style="color: red;">or providing an airtight seal when sampling through the existing filter vent hole</span> or penetrating the carbon-composite filter</li> <li>E. Field blanks are collected using samples of room air collected in the sampling area in the immediate vicinity of the waste container:<br/><i>(Note: field blanks for SUMMA® canisters are collected directly into the canister)</i></li> <li>F. Manifold equipped with purge assembly that allows QC samples to be collected through all sampling components that affect compliance with QAOs</li> <li>G. The manifold internal volume is calculated and documented in a field logbook</li> <li>H. The volume of headspace gas collected as calculated by the canister volume and internal manifold volume is less than 10 percent of the available headspace volume when a volume estimate is available</li> </ul> <p>(Section B1-1a(1))</p> |
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b. 2. Attachment B6 - Table B6-5

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| 37 | <p>Are procedures, processes, and equipment in place to ensure that the following operating conditions are in place for direct canister sampling:</p> <ul style="list-style-type: none"> <li>A. Canisters are evacuated to 0.1 mm Hg prior to use and attached to a changeable filter connected to the sampling head</li> <li>B. Sampling heads are capable of punching through the metal lid of the drums; <b>providing an airtight seal when sampling through the existing filter vent hole</b> or penetrating a carbon composite filter</li> <li>C. Field duplicates are collected in the same manner and at the same time as the original sample-</li> <li>D. Field blanks shall be samples of room air collected in the immediate vicinity of the waste drum sampling area prior to removal of the drum lid-</li> <li>E. Equipment blanks and field reference standards shall be collected using a purge assembly equivalent to the standard side of the manifold</li> <li>F. Less than 10 percent of the headspace is withdrawn when a headspace estimate is available<br/><i>(Note: The volume withdrawn is the canister volume and the internal volume of the sampling head)</i></li> <li>G. Each sample canister is equipped with a pressure/vacuum gauge capable of indicating leaks and sample collection volumes. The gauge shall be helium-leak tested to <math>1.5 \times 10^{-7}</math> standard cc/s, have all stainless steel construction, and be capable of tolerating temperatures to 125°C</li> <li>H. SUMMA® canisters or equivalent are used to collect samples</li> </ul> <p>(Section B1-1a(2))</p> |
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b. 3. Attachment B6 - Table B6-5

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| 39a | <p><b>Are procedures in place to ensure that a sampling head with an airtight seal for sampling through an existing filter vent hole are available? (Section B1-1a(1); B1-1a(2); B1-1c(5))</b></p> |
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